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ABSTRACT

Prompted by research showing that communication is one element that distinguishes teachers rated effective by students from those rated ineffective, a study was undertaken to develop a scale for assessing the perceived communication effectiveness of graduate teaching assistants (GTAs). Two groups, one of undergraduate students and one of their graduate teaching assistants, identified the communication behaviors used in assessing the communication effectiveness of teachers. These findings were then used to create a scale that was administered to approximately 1,000 undergraduates in 60 classes taught by GTAs. The findings suggested that students perceived as effective those teachers who possessed organizational stability, instructional adaptability, and interpersonal flexibility. (Author/FL)

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DEVELOPMENT OF A PERCEIVED COMMUNICATION EFFECTIVENESS SCALE

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ABSTRACT

The purpose of this study was to develop a scale for assessing perceived communication effectiveness of graduate teaching assistants. Recent research indicates that one element that distinguishes the teacher who is rated as effective from those rated as ineffective is communication. The study of teacher effectiveness, then, might best begin with an emphasis on the communication skill of the teacher. Two groups, one of undergraduate and one of Graduate Teaching Assistants, identified the communication behaviors they used in assessing the communication effectiveness of teachers. These findings were used to assess a group of Graduate Teaching Assistants. Factor Analysis indicates that three factors contribute significantly to student perceptions of Teacher Communication Effectiveness--Organizational Stability, Instructional Adaptability, and Interpersonal Inflexibility.

Development of a Perceived Communication Effectiveness Scale

The assessment of teaching effectiveness in general, and undergraduate teaching specifically, has been the subject of research for years (for an extensive review, see Kulik and McKeachie, 1975). Researchers in this area have concentrated on: (1) teaching methods to determine which teaching strategy is the most effective (e.g., Bochner and Yerby, 1977), (2) teacher traits to determine which teachers are most effective (e.g., Ryans, 1961(a); 1961(b); and Mattson, 1974), and (3) teaching processes to determine what communication styles or strategies are most effective (e.g., Norton, 1977; Knutson, 1980). These efforts have aimed at determining what the "effective" teacher looks and acts like so that other teachers can copy that behavior or so that administrative requirements can be fulfilled.

A survey of previous research on classroom communication indicates that research prior to 1973 largely contrasted teaching methods but failed to provide "empirical knowledge of value to teachers" (Nuthall and Snook, 1973, p. 72). Recent attempts to identify teacher effectiveness traits have produced mixed results. Andersen (1979), for example, found no relationship between teacher immediacy and cognitive learning, but did find immediacy to be a meaningful predictor of perceived teaching effectiveness. Additionally, Scott and Nussbaum (1979) and Norton and Nussbaum(1980) indicate that communicator style is an important component of teacher effectiveness, but suggest that further research is needed before teachers can be told how to improve their teaching.

According to Lynn (1976), good communication is essential to good teaching, but we still know very little about theories of teaching. Norton (1980, p.7) further indicates that ". . . if a person is perceived

as having an effective style and as being a good communicator, then the person will be perceived as a good teacher."

Friedrich (1982) offers one possible explanation for the inability of past research to isolate and identify the elements of classroom communication which predict student achievement. His explanation is that classroom communication accounts for only 25 percent of the variance in predicting student outcomes. That is, teacher behaviors and student behaviors in the classroom together account for only 25 percent of the variance in predicting student achievement. It is little wonder, then, that Mintzes (1980, p. 149) suggests that research on teaching effectiveness shows that the behaviors are complex and that "our knowledge in this area is quite limited."

Thus, despite a plethora of research studies, we still have very little knowledge about teacher effectiveness that can be put to general use in identifying someone who will capture students' attention and motivate them to learn the subject. Kulik and McKeachie (1975, p. 219), nevertheless, do identify one element that distinguishes the teacher who is rated as effective from those rated as ineffective--that factor is communication. From the perception of both students and peers, they conclude, "The good teacher is a good talker."

The study of teacher effectiveness, then, might best begin with an emphasis on the communication abilities of the teacher. As Adams (1971) indicates, a necessary first assumption of teacher effectiveness is that " . . . communication is a basic element." As such, the character of communication in the classroom, and the attendant communication skills of the instructor, play a key role in defining instructor effectiveness. The remainder of this paper outlines the steps used to develop a communication effectiveness scale.

Defining Communication Effectiveness

The problem of defining communication effectiveness is crucial. Meaningful study of a construct rests on the ability of evaluators to design methods and procedures which validly and reliably assess that construct. Therefore, a first step for this study was to identify those characteristics of effective communication in the classroom which determine degrees of proficiency. That is, what behaviors of the teacher lead students to perceive one teacher as effective and what behaviors lead them to rate another as less effective?

For communication effectiveness, such a definition is not one that can be "handed down" or enforced on others. Characteristics which define the effective communicator are, of necessity, the product of a consensus of those who ultimately must do the judging--in this case, undergraduate students. Were someone to impose a definition and then have students evaluate or judge instructors based on these imposed values, the results would lack validity.

Assessing Communication Effectiveness

A related concern is that of measurement. What is the best method, or methods, to assess communication effectiveness in a manner which will allow information to be returned to teachers and allow them to change behaviors and improve communication skills? The answer to this question is complicated by the fact that skill measurement must be judged by four important criteria: (1) the definition should be student-generated, (2) there should be teacher input, (3) the instrument must identify concrete behaviors, and (4) the instrument must be reliable and valid.

First, the definition of communication effectiveness should be

student-generated. A reason for using a student-generated definition is that student evaluators must be capable of identifying the behaviors of their instructors. Likewise, they must feel that the evaluation is important--that they have a say in their education. When students have input into the process, they may have a feeling of "ownership" in the data and the process. Also, without the initial observations and perceptions of students, the instrument created may reflect researcher biases.

Second, there should be teacher input. As with undergraduate students, instructors need to feel that this instrument and process are important and useful. Without their input and cooperation, the instrument might never be used, or cooperation in skills training might be minimal--thus negating any benefits. "Ownership" of the instrument is crucial to the success of the assessment of communication effectiveness.

Third, the instrument items must identify concrete behaviors. Unless concrete behaviors are identified, there is little chance for instructors to know which of their behaviors are effective and which are ineffective. Specific, concrete behaviors such as "is abrupt in conversing with students" allow teachers to focus on actions they can correct or change; abstract, global descriptions such as "cold" do not identify what the teacher is doing to create student perceptions.

Fourth, the instrument used to collect the data must be both reliable and valid. In order for the instrument to be meaningful, it must capture the concept of student perceptions of communication effectiveness of teachers--that is, it must be valid. Not only is it important that the instrument be valid, but it also must capture such perceptions consistently--across classes and disciplines. It must be reliable.

The process followed in this study was developmental. A group of

students and one of instructors were formed to provide the initial input. The results of this step was piloted with an independent group of students, refined, and retested before the final instrument was created.

Instrument Development

In keeping with the criterion that the data be both student and teacher generated, "steering committees" were established to serve as input monitors. These committees were composed of twenty-eight undergraduate students and thirteen graduate students, the teachers.

The undergraduate students represented all four classes--five members were Seniors, twelve were Juniors, nine were Sophomores, and two were Freshmen. In addition, they represented eight colleges--Agriculture, Arts and Sciences, Business, Criminal Justice, Engineering, Home Economics, Journalism, and Teachers College. The Graduate student committee represented seven colleges--Agriculture, Arts and Sciences, Architecture, Business, Engineering, Home Economics, and Teachers College.

In selecting members for the steering committee, an effort was made to get a cross section of people representative of the various colleges and departments in the university (Babbie, 1973) while keeping the group small enough to be manageable (Merry and Allerhand, 1977, suggest a group of about fifteen). Subgroups were encouraged, and formed in some cases, to provide input from departments and interested groups to steering committee members. The two steering committees met separately so that they could independently identify the important communication behaviors and not be influenced by or intimidated by the other group. In addition, it was anticipated that a more comprehensive

list of behaviors would likely result from the two groups working independently.

A second essential criterion was the identification of concrete GTA behaviors which could be identified by undergraduate students and modified by GTAs. The process used by the steering committees to establish these behaviors is an abbreviated modification of one suggested by Merry and Allerhand (1977) for "Problem-sensing." The central idea was to get GTAs and undergraduate students together so both groups could exchange ideas and develop a consensus. Thus, each group met separately to develop individual perceptions and discuss the importance of each of the behaviors and then met jointly to shape the individual lists of important communication behaviors into a consensus.

The process of developing the instrument followed closely the developmental procedures described by Smith and Kendall (1963). First, qualities or characteristics to be evaluated were generated independently by each group. The ideas generated were phrased in the students' terminology. The reason for keeping the student terminology was twofold. First, it helped the researcher avoid meaningless jargon. Second, it helped insure that the students who eventually evaluated their instructors would be best able to understand the concepts being tapped.

During the first step of the procedure, the experimenter conducted all of the meetings of both groups but was especially careful not to make evaluative statements about the input, or to discourage any input. This process was used to insure that the behaviors were those of the undergraduate students and GTAs--not the biases of the researcher. This process seemed to work as one member of the GTA committee commented later in the process that it seemed that there had been little input from the researcher and wanted to know if it was purposeful. Several

other members nodded in agreement at the time indicating that they wanted to know why the researcher had had no input during the process.

The rationale of wanting unbiased lists of behaviors appeared to satisfy the curiosity of the group. In fact, one GTA member who had been skeptical of the process and the study in general seemed to see the value of the process and wanted to be first to volunteer subjects for the final phase of the project.

During the first phase of the instrument development, a large number of stories were told. As each member offered behaviors that s/he considered important, a story of "a time when . . ." or "a teacher who . . ." would generally accompany the suggestion. For this reason, the meetings were sometimes long and seemed to be unproductive. On the other hand, the examples often served as triggers for identifying other behaviors and support for the suggested behavior.

While the groups did not establish standards for the behaviors, as Smith and Kendell did, the behaviors were noted as being either ones to be cultivated and used or as ones that ought to be avoided. After several meetings, the researcher noticed that the undergraduate group seemed to be identifying primarily behaviors to be avoided and graduate students seemed to be identifying behaviors that they felt should be strengthened or cultivated. During one meeting, a graduate student also noted that their group seemed to be concentrating on positive behaviors (what the effective teacher does) and suggested that the group identify some negative behaviors also. It is also interesting to note that the distinction between "GTA" and "teacher" was dropped by the committees at times and that they considered the effective communication behaviors of GTAs to be the same as those of teachers in general.

The third step (editing the behaviors) was performed by the re-

searcher. Some of the behaviors needed slight editing so they could be used in an instrument. For example, "looks you in the eye" was edited to read "maintains eye contact" and "smiles at you" became "smiles." Although there was some editing of the wording of behaviors, care was taken not to change the idea expressed by the groups or to insert any communication jargon. The results of the editing phase were later checked by the groups and further revised if the groups decided that a wording change was inappropriate or did not retain the original intention of the contributor. A typical example of a group editing change is "brings in material outside of book" which eventually was worded "teaches only from the textbook." This concept went through several changes before the group could arrive at a wording that captured the concept the group felt was important.

The fourth step was to ask group members to independently indicate the behaviors they considered important to the overall concept of teacher communication effectiveness. This phase of the procedure seemed repetitive to one member of the undergraduate committee, but the ensuing discussion of the behaviors and the rationales that were provided for keeping certain behaviors while deleting others led to a more refined list of behaviors that were justified for use with students in general. The original lists of behaviors produced 168 terms from both groups (some were duplicates) which evolved into a list of 111 behaviors that were finally considered of importance to the concept of teacher communication effectiveness. At this point, the experimenter added a list of eighteen behaviors to those previously identified by both groups and asked the group if they were also important. These behaviors were ones not identified by either group but were triggered by discussions with the groups or were variations of previously identified behaviors.

They were offered as potentially important behaviors the group might want to consider. There was no pressure applied to either accept or reject any of the items; they were discussed by the group and considered on the same merits as were all of the previous items. Several of these items were incorporated with the student lists (some were modified) and eventually helped comprise the final list of 122 behaviors.

The list of 122 behaviors became an instrument that was administered to 208 undergraduate students in the College of Business Administration, Teacher's College, and Arts and Sciences as a pilot study or pre-test. This was the fifth step in the instrument development process. Here a group of independent judges (students similar to the ones who completed the final instrument) identified the behaviors they used to determine the communication effectiveness of their instructors by checking "yes" or "no" on the list. This step provided the two groups with information they needed to make the final decisions on which behaviors were important to the teacher communication effectiveness concept. In addition, this step served to validate the instrument as it was being developed. The validity of student ratings of instructors is important in this study because it is essential for the instrument to capture the behaviors that students use to rate the communication effectiveness of their GTA instructors.

The sixth and final step was for the group members to reconsider all of the items submitted to the student groups and to decide, based on the pilot study data, which behaviors ought to be included in the final instrument. The combined groups of undergraduate students and GTAs decided to retain a behavior on the final instrument if at least half of the student sample indicated that it was important to them. The rationale for the 50% figure was that if half of the pilot study students

used the behavior as a determinant of communication effectiveness, it was potentially important to half of the student population and thus warranted further consideration. In addition, the groups considered student comments on the behavior list and decided to modify twelve of the behaviors and retain an additional three behaviors that more than 50% of the student sample had indicated were not important.

The behaviors that were retained even though a majority of the student sample said they did not use that behavior to determine teacher communication effectiveness were: "talks to the blackboard," "misspells," and "distracting mannerisms." The rationale for including these three variables was three-fold: First, the majority of the two groups felt that the behaviors were important to the determination of teacher communication effectiveness. Second, the groups felt that possibly the student sample was biased and that another check was warranted. Third, these behaviors approached the 50% criterion, but did not quite meet it.

In addition, five items were added to the original list of behaviors based on comments of students during the pilot study. (Question 123 asked students for "other behaviors" they felt had been omitted.) The five added variables were: "Starts class on time," "dismisses class on time," "relates theory to real life examples," "discriminates against ethnic groups," and "goes over tests in class."

The process followed is that suggested by Babbie (1973) in that the questionnaire was developed from group input and reprocessed through the group. The advantages of using such an approach are: (1) the group of people who are to be administered the questionnaire identified the issues of importance, (2) the same group also helped make the questionnaire more understandable for the subjects who used it, (3) the question-

naire belongs to the group and is not imposed upon them by an outside force, and (4) the questionnaire is in the language of the users (Nadler, 1977). The use of both undergraduate students and GTAs to develop and refine the instrument enhances the opportunity for both groups to have input and claim ownership in the data collected. A disadvantage, of course, is the time involved in constantly returning to the steering committee to solicit feedback and reaction. The perceptions tapped are, however, more likely to be valid.

Finally, the research instrument was created by randomizing the order of the items from the pilot, and the five items of the dependent variable scale. This was accomplished by selecting numbers from a hat and by then using a random numbers table to determine which items were to be stated positively and which were to be stated negatively (even numbers were stated positively and odd numbers negatively).

A second pilot was then conducted with the final instrument prior to using it in the study. During this pilot, the administrator checked for student problems, time involved in completing the instrument, and comprehension of the survey by the students. Several minor changes were performed before the students were given the instrument for an assessment of their instructors.

Concurrently, GTAs were contacted and invited to participate in the final administration of the instrument during the week of April 20. This time was chosen because it was late in the semester, but came about two weeks before the final exam period, so students wouldn't be unduly influenced by impending exams and the final grades they might anticipate in the course. This process involved contacting colleges, departments, and individual GTAs to ascertain the number of participants.

The important criteria were: (1) that participation be voluntary,

(2) that the GTA be a classroom teacher rather than perform such duties as "reader," "grader," "laboratory assistant," or assistant to a professor of a course, and (3) that the instrument be administered by someone other than the classroom instructor. It is important to note that a couple of GTAs were included who did not specifically meet the criteria, but who were primarily responsible for the instruction in specific courses even though they had major duties of assisting a professor.

Subjects

This study is concerned with the communication effectiveness of Graduate Teaching Assistants (GTAs). The "subjects" are 1201 students in sixty classes taught by GTAs. Twenty-one surveys had to be deleted leaving 1180 students. The sixty GTAs represent eighteen departments in four colleges at a midwestern university who volunteered to participate when asked.

Independent Variables

This study was concerned with the identification of the behaviors of GTAs that lead to student perceptions of communication effectiveness. The behaviors comprising the independent variables were generated by two groups of students--undergraduate and graduate students. One hundred-nine behaviors were identified by these groups as being of importance in determining the communication effectiveness of GTAs. These variables were eventually factor analyzed to produce three factors which became the independent variables of the study.

Dependent Variable

The dependent variable in this study is teacher effectiveness as measured by a five-item scale from the Purdue "Instructor and Course

Appraisal: Cafeteria System." This scale was used because it has reported reliabilities of .93 (Hoyt coefficient, Nussbaum, 1981) and .90 (Norton & Nussbaum, 1980) and has been used before to assess the effectiveness of college teaching. These items were embedded in the instrument containing the 109 independent variables--creating one instrument of 114 variables.

Data Analysis

Several analyses were performed on the data to determine the factors that impact student perceptions of teacher communication effectiveness. The instrument was first analyzed to determine the factors it contained and to ascertain its reliability. The data collected with the instrument was then analyzed to determine the communication effectiveness of GTAs and to identify the factors which influenced student perceptions of their communication effectiveness.

First, the instrument was factor analyzed. The objective of factor analysis was to determine the relationship among the individual instrument items. Some groups of independent variable items were expected to combine to represent more basic concepts. These "factors" were then used for interpreting the results more appropriately and for suggesting the communication workshops later.

In the factor analysis, the following guidelines were adhered to in identifying factors: (1) Because of the exploratory nature of this study and because the objective was to locate factors that would produce the most interpretable results for the target group of GTAs, several factor analyses were performed to find the most understandable factor solution among the 109 variables. (2) Cattell's (1966) suggestion than an eigenvalue of 1.0 be used as a cutoff in determining the

number of factors was used to identify a factor. (3) The third requirement was that a factor contribute at least 1% to the total variance accounted for and have at least three variables. (4) The predominant .60 - .40 criterion was applied (Tucker and Chase, 1975): in order to be included, a variable had to "load" .60 on one factor and no more than .40 on any other factor. Because of the large sample size, additional variables were added if their loading on a factor was double the loading on any other factor (Thorndike, 1978).

In addition to factor analysis, reliability estimates were calculated for each dimension of the instrument and the dependent variable. The loadings of the variables on the dimensions of the factor analysis is one indicant of reliability. A second estimate of reliability was calculated for each dimension of the instrument. These correlations indicate the degree of internal consistency of the instrument.

Validating student evaluations of teacher effectiveness is difficult because there are no established criteria by which to measure standards of quality (March, 1977). Thus, validating a measure of GTA communication effectiveness requires the use of several alternative methods. Recent research has centered around student performance on standardized examinations (McKeachie, Lin and Mann, 1971; Frey, 1973; March, Fleiner, and Thomas, 1975) as well as correlations of instructor ratings and final exam scores (Sullivan and Skanes, 1974) to determine the relationship of student "achievement" to teacher evaluations. In addition, March (1977) has used increased interest in the subject, future applications of learning, and retrospective evaluations of former students to validate instructional effectiveness.

The question of validity in this study was resolved through a two-step process. First, 208 undergraduate students were asked to agree or

to disagree that the behaviors identified earlier by both graduate and undergraduate students reflected communication effectiveness. This served to validate that they in fact used the specified behaviors to determine whether a teacher was an effective communicator. Second, a bivariate regression was computed--regressing communication effectiveness ratings of teachers on student course grades as reported by the students. Recently, student ratings have been positively correlated with achievement (Braskamp, Caulley, and Costin, 1979; Bryson, 1975; Centra, 1977; Frey, 1976; Marsh, 1977; McKeachie, Lin and Mann, 1971). Final course grades were chosen here because the communication effectiveness measure was used with a variety of courses across several disciplines. Since there are numerous methods for evaluating students and they vary with classes (e.g., speech classes are evaluated on speaking skills, math classes are evaluated on problem-solving skills, etc.), the only consistent achievement indicant across classes and disciplines is final course grade.

Results

A principal axis factor analysis was computed. Both orthogonal and oblique rotations were performed in an attempt to obtain the most interpretable factor solution. The number of factors retained was varied from six with an eigenvalue of 1.0 or better down to three in an attempt to ascertain the most interpretable factor solution. The best solution seemed to be a three-factor solution. Of the rotations, the orthogonal varimax produced the most interpretable solution, although it was the same as the oblique rotation with a varimax prerotation.

A Scree Test was applied to the data to help determine the num-

ber of factors (Cattell, 1966). The Scree Test confirms the presence of a three-factor pattern.

With orthogonal varimax rotation, the first factor produces an eigenvalue of 26.66 and accounts for 78.2% of the total variance; factor two produces an eigenvalue of 4.77 and accounts for an additional 14.0% of the total variance; and the third factor produces an eigenvalue of 2.61 and accounts for an additional 7.7% of the total variance. Altogether the three factors account for 99.8% of the variance (see Table 1).

Table 1 about here

Applying the .60 / .40 criterion, factor one comprises six variables (numbers 15, 16, 22, 44, 45, and 67); factor two, two variables (Numbers 10 and 101); and factor three no variables. By adding any variable that loaded double on one factor the value that it loaded on any other factor (but more than .30), factor one added an additional seven variables (numbers 3, 4, 7, 47, 56, 59, and 83), factor two an additional sixteen variables (numbers 5, 8, 9, 18, 26, 29, 51, 54, 60, 65, 72, 82, 88, 99, and 105), and factor three eleven variables (numbers 24, 25, 28, 58, 63, 81, 85, 90, 98, 102, and 111). For complete factor loadings, see Table 2.

Table 2 about here

Labels for the factors were developed in a three-step process. First the highest loading variables were noted. Second, a second-order factor analysis was computed to better determine the elements of the factors. Third, previous research was reviewed for factors with sim-

ilar variables.

The highest loading variables for factor one (22, 67, 15, 16, 44) indicate organizational skills—the highest loading variable is "My instructor is organized" followed by "My instructor is in control of the situation." The factor also seems to indicate a sense of stability in the organization of the instructor and includes such variables as "My instructor is consistent" and "My instructor points out what is important in each lesson." A second-order factor analysis with an oblique rotation produced a single factor solution. Previous research was replete with studies that had found a factor labeled "organization" or some variant of the concept. Thus, the label "Organizational Stability" was applied to factor one.

The highest loading variables for factor two (10, 101, 82, 60) indicate an openness to instructional approaches: "My instructor is open to student ideas," "My instructor shows interest in student opinions," "My instructor encourages student participation," and "My instructor cares about students." A second-order factor analysis produced three factors. The first factor captured the adaptability of the instructor, the second instructional concern, and the third flexibility and openness. Previous research has indicated some support for an adaptability factor in the classroom. Thus, the second factor was labeled "Instructional Adaptability."

The highest loading variables in factor three (85, 25, 98, 90) indicate that the instructor does not deal with students well interpersonally. The variables were "My instructor tells sexist jokes," "My instructor puts students down," "My instructor won't admit mistakes," and "My instructor avoids answering student questions." A second element seems to be the rigidity of the instructor's style. The

second-order factor analysis produced two factors: negative interpersonal climate and rigidity or inflexibility. There did not appear to be much previous research that dealt with this factor, so the label "Interpersonal Inflexibility" was applied.

An interfactor correlation matrix shows that the three factors are not highly intercorrelated: factors one and three correlate highest (.532), followed by factors one and two (.467), and factors two and three (.355).

Reliability

Reliability estimates were calculated for all three factors and for the dependent variable-teacher effectiveness.

Teacher Effectiveness

Estimates of reliability were computed using Cronbach's Alpha (Hull & Nie, SPSS Update, 1979). Data for this study produced a mean of 16.4 and a standard deviation of 5.1. The internal consistency reliability coefficient Alpha was .882.

Factor Reliability

Estimates of factor reliability were computed for each factor using Cronbach's Alpha (Hull & Nie, SPSS Update, 1979). For factor one, the mean was 51.8 with a standard deviation of 10.0. The Alpha reliability coefficient was .91. For factor two the mean was 70.5 with a standard deviation of 12.0. The Alpha reliability coefficient was .89. The mean for factor three was 47.62 with a standard deviation of 6.3. Its Alpha reliability coefficient was .81.

Validity

A regression analysis was computed as a followup to the first validity check. This analysis used anticipated grade as the dependent variable and the general effectiveness ratings as the independent variable.

Some previous research has indicated a positive relationship between student ratings and achievement (Braskamp et al., 1979; Bryson, 1975; Centra, 1977; Frey, 1976; Marsh, 1977; McKeachie, Lin, and Mann, 1971). The correlation matrix of this analysis shows a low, positive correlation between grade anticipated and general effectiveness ratings (.14).

Table 3 about here

Regression results indicate that the overall F is significant ($P < .01$) when teacher effectiveness ratings are regressed on anticipated grades (see Table 3). However, the R Square value indicates that anticipated grade accounts for only two percent of the variance in the regression equation.

Discussion

The three factors found in this study are not new. Each factor has a relationship to previous research and can be linked to studies of general teacher effectiveness by the behaviors identified here as important to the overall concept of teacher communication effectiveness.

Factor one is quite stable in educational studies of general teacher effectiveness. Guthrie (1949) and later French (1957), plus

a host of other researchers, have found some of the same behaviors to be ones of importance to general teacher effectiveness. It appears that when students attempt to determine the communication effectiveness of their teachers, the most important concept for them is the teacher's ability to organize and present materials clearly and concisely. It is little wonder, then, that Brophy (1979, p. 4) says "Effective teachers know how to organize and maintain a classroom learning environment." Although Brophy was referring to the elementary classroom teacher, it seems that even college students want their teachers to be organized. Classroom organizational skills are clearly related to teacher communication effectiveness ratings. The organized teacher, or the one students perceive as being organized, is the one who is rated as effective and the less organized teacher is rated as less effective.

While the same (or similar) variables have been used in previous research, they often have been labeled as something other than organization. Sometimes the label has been "structure" and "skill" (McKeachie & Lin, 1975; McKeachie, Lin & Mann, 1971; Vecchio & Costin, 1977), "expertness" (McGlone & Anderson, 1973) or "clarity" (Costin et al., 1971; French-Lazovik, 1974; McCaleb, 1979; McCaleb & White, 1980; Staton-Spicer et al., 1980). Other studies have been very direct in stating that "organization" or "planning" is a variable of importance to teacher effectiveness (Coker et al., 1980; Crawford & Bradshow, 1969; French-Lazovik, 1974; Frey, 1973; Harvey & Barker, 1970; Hayes, 1963; Isaacson et al, 1964; Ryans, 1961(b); Sullivan & Skanes, 1974).

What all of these studies say, essentially, is that the teacher who is organized is one who (1) knows the subject matter well, (2) is properly prepared, (3) gives clear, concise explanations, (4) points

out what is important to know, and (5) uses visual aids/blackboard well. The same conclusions can be drawn from the current study. Organization is all-important to students' perceptions of teacher effectiveness and the more an instructor projects the image of being organized and prepared, the more students will tend to rate the instructor as being effective, generally, and a good communicator, specifically.

Factor two does not seem to have as clear and stable a past as factor one. Some of the concepts appear to have had impact in previous research, but the overall concept of adaptability has not been as clear and consistent as organization. At the same time, Kulik and McKeachie (1975) report eleven factor analyses of teacher ratings which found a factor similar to factor two of the current study. The factor labels vary considerably, but the variables that constitute the factors appear to capture the same basic concept.

One of the early reports to find a relationship between teacher's instructional adaptability and student ratings was Gibb (1955). Gibb (1955, p. 261) reported that the more effective teacher "places no great social distance between students and himself." In this teacher's class, there is little teacher domination and/or student control. Rather, a democratic and friendly atmosphere is established. Others have also found "friendly-democratic" behaviors to be important (Costin et al., 1971; Costin, 1971; Bledsoe et al., 1971.). Others have labeled this element "rapport" (Hall, 1970; McKeachie & Lin, 1975; McKeachie, Lin & Mann, 1971) or "sociability" (Scott & Nussbaum, 1979) or "empathy" (Bochner & Yerby, 1977).

Additional studies have found that other aspects of factor two are important. For example, a number of studies identify the "flexibility"

element of factor two (Costin et al., 1971; Ryans, 1961(b); Staton-Spicer et al., 1980); Knutson (1980) called it "versatility" and others use the "openness" label to refer to some of the same behaviors (Coker et al., 1980; Frey, 1973; Vecchio & Costin, 1977). Another aspect which seems to come through in a number of studies is "feedback" (Hall, 1970; McKeachie & Lin, 1975; McKeachie, Lin & Mann, 1971).

There are also a number of studies that specify other variables or factors which seem to represent the same aspects. For instance, "attention to student reactions" and "interest in students" in general seem to be important in a number of studies (Clinton, 1930; Costin, 1971; Costin et al., 1971; Crawford & Bradshaw, 1968; French, 1957; French-Lazovik, 1974; Hall, 1970; Harvey & Barker, 1970; Smith, 1944). Other elements of interest are the "encouragement of independent thinking" (Crawford & Bradshaw, 1968; Costin, 1971; French, 1957; Sullivan & Skanes, 1974), "accessibility" (Frey, 1973), "smiles," (Vecchio & Costin, 1977), and a general "personality" factor (Clinton, 1930; McGlone & Anderson, 1973; Smith, 1944).

Thus, it seems that organization is not the only important factor in student perceptions of a teacher's ability. A teacher must also be adaptable in the classroom and willing to listen to students' points of view. In general, the teacher needs to show some concern for the student and his/her interests. The more the teacher can project these behaviors, the more likely students will perceive the teacher as being an effective communicator.

Factor three is almost as obscure as factor one was predominate in the research. It seems that very little has been done to assess the interpersonal inflexibility of teachers. Possibly there is good reason for this lack of research. In the factor analysis, factor three added

less than 8% to the total variance accounted for as compared to the 78% for factor one.

Probably the closest relationships in past research come from Vecchio and Costin (1977) who attempted to determine "negative affect" in the classroom. Some of their variables (such as "teacher rejected students' statements" or "teacher made it clear that students would have little choice") resemble the variables in factor three. These variables display the inflexibility and rigidity attributed to factor three. Other variables similar to the behaviors of factor three or that could be attributed to it are "kindness" (Clinton, 1930), "is willing to listen to new viewpoints" (French, 1957), and is "student oriented" (Crawford & Bradshaw, 1968). McGlone & Anderson (1973) found a factor they say relates to "sympathy, fairness and accuracy." Although not precisely interpersonal inflexibility, this concept also captures some of the flavor of factor three.

Although not as important as factors one and two, students do rate their teachers' communication effectiveness on the basis of the teacher's interpersonal inflexibility. Even though the factor does not have an established reputation in the general teacher effectiveness literature, the concept deserves the attention of researchers to determine its true relationship to the construct of teacher communication effectiveness.

Summary

Although the study of effective teaching has spanned many years, the ultimate conception of the effective teacher remains in the minds of those students who make their judgments concerning their teacher. Thus, effectiveness is not an inherent attribute of teaching, but rather is

imposed upon it by student judgments of their teachers' behaviors. Accordingly, this study attempted to extract some of the abstract concepts from the minds of students and to convert them to observable, controllable behaviors that instructors could identify and improve through skills training.

The findings of this study suggest that teachers should be organizationally stable, instructionally adaptable, and interpersonally flexible in their classroom behaviors. While there is no direct causal link between these factors and effectiveness ratings, there is a tendency for students to rate the attendant behaviors as positive assets. Future research in this area might best focus on (1) additional behaviors that contribute to overall ratings of effectiveness and (2) to establishing causal relationships between specific behaviors and effectiveness ratings in an effort to eradicate ineffective behaviors and promote effective behaviors more positively.

Table 1

Eigenvalues and Variances Accounted for in the

Orthogonal Varimax Rotation of Factor Analysis

	1	2	3
Eigenvalues	26.663267	4.775611	2.611034
Portion	0.782	0.140	0.077
Cum Portion	0.782	0.922	0.998

Table 3

Summary of Anticipated Grade Regression Analysis with Teacher Effectiveness Ratings

Variable	df	SS	MS	F	R^2
Regression	1	185.121	185.121	23.62*	
Teacher Effectiveness	1	185.121	185.121	23.62*	0.01974
Residual	1173	1912.369	7.837		

*Significant $p < .01$

TABLE 2

Factor Structures and Factor Loadings for Varimax Rotated Solution (N=1180)

#	Variable	My instructor. . .	Factor1	Factor2	Factor3
Factor One		Organizational Stability			
3		has difficulty handling the subject matter."	0.51001	0.15459	0.23831
4		is properly prepared."	0.57932	0.18015	0.19121
7		gives unclear explanations."	0.55248	0.20012	0.25224
15		answers questions clearly and concisely."	0.68557	0.27947	0.26326
16		is consistent."	0.60069	0.20218	0.31713
22		is organized."	0.70559	0.13718	0.22230
44		points out what is important in each lesson."	0.60993	0.29234	0.17916
45		explains guidelines."	0.61535	0.36152	0.12677
47		applied standards and guidelines to everyone."	0.36702	0.18611	0.12531
56		uses visual aids poorly."	0.38598	0.18385	0.21332
59		demonstrates a lack of competence."	0.59573	0.17955	0.29828
67		is in control of the situation."	0.66979	0.23276	0.25586
83		knows what to write on the board and what not to."	0.57690	0.27326	0.22252
Factor Two		Instructional Adaptability			
5		gives students a choice of activities."	0.04069	0.48133	-0.06464
8		asks for questions	0.16355	0.44317	0.19490
9		is willing to deviate from what was planned when relevant."	0.08146	0.51641	0.11781
10		is open to student ideas."	0.07786	0.62658	0.19687
18		uses varying voice inflection."	0.22766	0.52594	0.05161
26		allows for student complaints."	-0.00385	0.54790	0.18867
29		gets everyone involved."	0.19815	0.47942	0.06076
51		writes comments on student papers."	0.10725	0.33120	-0.04003
54		is willing to hear differing views."	0.09533	0.55493	0.27529
60		cares about students."	0.29695	0.58945	0.31286
65		permits reasonable exceptions to guidelines and policies."	0.18542	0.50286	0.13195

72	treats students as individuals."	0.26923	0.55725	0.26659
82	encourages student participation."	0.18539	0.59654	0.08875
88	uses gestures while talking."	-0.01333	0.48583	0.00546
91	smiles."	0.09009	0.54886	0.27270
99	solicits feedback from students."	0.09343	0.49070	0.17346
101	shows interest in student opinions."	0.16534	0.60643	0.37686
105	knows students' names."	0.14148	0.49080	0.10924
Factor Three	Interpersonal Inflexibility			
24	ignores some students."	0.24454	0.19276	0.44991
25	puts students down."	0.17813	0.14953	0.55566
28	presents only his/her own point of view."	0.17108	0.09009	0.37655
58	discriminates against ethnic groups."	0.15577	0.11252	0.39135
63	discriminates against females/males."	0.23745	0.14678	0.48609
81	discusses theory extensively at the expense of practical applications."	0.12842	0.02392	0.33819
85	tells sexist jokes."	0.11750	-0.08119	0.55824
90	avoids answering student questions."	0.25411	0.28119	0.53313
98	won't admit mistakes."	0.19931	0.20633	0.54206
102	teaches theory without relating it to real life examples."	0.23718	0.16767	0.41668
111	interrupts students when they are speaking."	0.14103	0.03689	0.51305
Variables that did not load on any factor:				
1	goes over homework problems/assignments."	0.44036	0.28446	0.02824
2	fails to provide students feedback on the quality of their work."	0.27559	0.23204	0.11618
6	uses outdated illustrations and examples."	0.26314	0.10991	0.28329
11	refers to materials not yet covered."	0.32648	0.01912	0.28985
12	forgets to get answers to relevant questions if they are not known."	0.42238	0.17707	0.34852
14	starts class on time."	0.48953	-0.02713	0.28595
17	checks periodically on students' understanding of material."	0.42220	0.43593	0.12523
19	explains expectations."	0.50676	0.41586	0.12898

20	talks continuously without saying anything."	0.57920	0.10024	0.39033
21	consistently misspells words."	0.29303	0.05543	0.25835
23	spends too much time on irrelevant material."	0.53415	0.01200	0.37630
27	follows through on commitments to students."	0.34804	0.48073	0.15025
30	dismisses class on time."	0.11564	0.18668	0.26749
32	fails to get excited about the subject."	0.30685	0.43946	0.16630
33	defined the students' responsibilities in the course."	0.43252	0.29984	0.21596
34	speaks loudly enough."	0.28329	0.41065	0.22195
35	avoids eye contact with students."	0.16860	0.32299	0.29959
37	erases the board before students can copy notes."	0.10463	0.24124	0.31319
38	is unable to recognize when material has not been understood."	0.31516	0.21574	0.20602
39	is available during office hours."	0.30700	0.32200	0.13019
40	sits behind a desk."	-0.06005	-0.02655	0.25614
41	regularly measures and informs students of their progress."	0.30052	0.22123	0.06041
42	talks over students' heads."	0.26762	0.25215	0.37231
43	is comfortable with students."	0.27846	0.48721	0.30445
46	lectures directly and exclusively from notes or the textbook."	-0.03054	0.14810	0.06691
48	tells students where his/her office is located."	0.20965	0.24933	0.21631
49	is willing to meet with students who need help."	0.28180	0.46722	0.29262
50	provides only one approach to learning the course material."	0.22843	0.32917	0.19926
52	ignores grading criteria."	0.25761	0.10694	0.32542
53	communicates below the students' level."	0.37316	0.13256	0.28503
55	reviews and summarizes material."	0.53035	0.40643	0.07128
61	talks to the blackboard."	0.18865	0.26447	0.33632
62	isn't enthusiastic about students' achievements."	0.30991	0.44301	0.22661
64	is not boring."	0.48336	0.40785	0.19029
66	organized the content of the course in an illogical fashion."	0.45063	0.05654	0.35635
68	goes over tests in class."	0.19015	0.24180	0.04712
69	discourages questions."	0.16625	0.33085	0.46699
70	has a variety of materials and methods."	0.36266	0.49482	-0.05830
71	demonstrates confidence."	0.57133	0.36599	0.17482
73	makes an effort to show the interesting nature of the topics."	0.45927	0.56718	0.12988

74	makes students stand in the office."	0.10313	0.12241	0.27366
74	talks too fast."	0.20568	0.23684	0.29569
76	writes legibly on the blackboard."	0.32432	0.14395	0.19585
77	uses humor unrelated to the class (materials)."	0.14960	-0.29598	0.21349
78	is inflexible."	0.10011	0.31319	0.29122
79	speaks English poorly."	0.14957	0.30164	0.30830
80	sets guidelines and standards."	0.42983	0.32700	0.12555
84	shows friendliness equally."	0.23302	0.46089	0.41836
86	listens to students' questions and comments."	0.15036	0.43985	0.52238
87	gets off the subject easily."	0.45941	-0.22021	0.45712
89	doesn't use teacher-made materials (bibliographies, charts, graphs, handouts, overhead transparencies, models, ets.)."	0.12120	0.07608	0.11803
92	speaks in a monotone."	0.16844	0.40796	0.27009
93	directs comments to all students."	0.28218	0.33055	0.37268
94	has inflexible office hours."	0.17194	0.17222	0.20583
95	lacks dynamism and energy."	0.36081	0.42867	0.19819
96	lectures too fast."	0.21035	0.25254	0.29167
97	is open-minded."	0.19893	0.49420	0.46778
100	stutters and stammers."	0.24420	0.17607	0.42036
103	assigns readings relevant to the objectives of the course."	0.28033	0.30647	0.09658
104	has a syllabus with office hours and phone number."	0.21448	0.30358	0.02417
106	explains the rationale behind concepts."	0.48179	0.44451	0.11534
108	is easily diverted from the subject at hand."	0.46161	-0.17438	0.44989
109	has the office door open during office hours."	0.12294	0.24164	0.06531
110	explains that s/he is here for student help."	0.34050	0.53515	0.15949
112	gets off track."	0.53706	-0.13585	0.46852
113	speaks clearly."	0.30526	0.41407	0.33591
114	has distracting mannerisms."	0.34253	0.20450	0.45467

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